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AMSAT NEWS SERVICE
ANS-211

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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ANS-211 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 211.01
 >From AMSAT HQ KENSINGTON, MD.
DATE July 30, 2017
To All RADIO AMATEURS
BID: $ANS-211.01

Packet Module Status On Board ISS

ARISS has received several reports stating that the packet system on ISS is down. Here is what we know and our current forward plan.

The packet system in the Columbus module started to act up late last week, sending only a beacon. The ARISS team requested a power recycle by the crew, and with that power recycle, the packet system appears to have stop functioning completely. Note that this unit has been on-orbit for 17 years. It was launched on the STS-106 Space Shuttle Atlantis mission in September 2000 and was built, tested and certified for flight about 20 years ago.

The ARISS team has had some extensive discussions on the way forward. We would first like to do some additional troubleshooting with the

existing packet module. It will take some time (weeks) to develop troubleshooting procedures, get the procedures approved by NASA and then conduct the tests with the crew. This includes an additional power cycle. The turnaround time is much longer than usual because a new crew will soon be arriving on ISS. The current crew is focused on the new crew arrival and there will be about a one- to two-week transition after the new crew arrives. On the positive side, one aspect of our troubleshooting—a second power cycle—will occur automatically because ARISS is shut down during crew docking and turned on afterwards. However, there will be more to our troubleshooting than just the power cycle.

We have some additional plans with alternative solutions, but those are currently being discussed and prioritized within the ARISS team. All solutions will require international ARISS team coordination, additional procedures and crew interaction. People who have carefully followed ISS operations know that crew time continues to evolve with the more extensive research that is occurring on-board. Suffice it to say, it will take longer than what it has taken in the past to work through this issue.

The above information is to make sure that ARISS properly sets expectations on how long it will take to resolve this. At this point, expect a few months with no ARISS packet.

As you all can see, deploying the Interoperable Radio system that is currently under development by ARISS has become even more critically important. The ARISS team is laser focused on getting that system developed and deployed. We are conducting a final design review with NASA on this system next week. But we cannot get to the finish line without your help. If you can, please consider a donation to the ARISS radio fund by clicking on the ARISS donate button on the ARISS web page (www.ariss.org) or the AMSAT web page (www.amsat.org). All donations, large and small are appreciated.

On behalf of ARISS, we thank you for your sustained interest and support of our program.

Sincerely,

Frank H. Bauer, KA3HDO
ARISS International Chair

[ANS thanks ARISS and Frank, KA3HDO, AMSAT Vice President, Human Spaceflight for the above information]

Oklahoma Radio Amateur is First to Score Satellite VUCC from Greenland

It took just 4 days — some of that time without much sleep — but ARRL member Gabe Zeifman, NJ7H/VE6NJH, of Oklahoma City recently became the first radio amateur to earn VUCC — working 100 grid squares — by satellite from Greenland. In fact, his is the first VUCC award of any kind from Greenland. A relatively new licensee, Zeifman, 22, has managed to activate more than 300 grid squares via satellite as well as nearly 20 DXCC entities. Apart from the operating accomplishment, Zeifman told ARRL, he was attempting to inspire newcomers.

“I thought it could get more people interested in satellites in

general – VUCC is very achievable for anyone – and could also get more people interested in roving," said Zeifman, who began training this week to become an air traffic controller. "I was overwhelmed by the support I got; it was really astonishing the number of people that helped!" He said one operator activated eight grids for him, while others who don't typically rove, visited at least one neighboring grid square to give him a new one.

"It was really cool to see our community throughout the world come together to help in this goal," he said. "I really first envisioned this idea when I realized I had nearly 70 grids confirmed from Iceland, and I thought 'hmm, OX is an even better location, I bet it's possible.'"

Zeifman said he prefers the linear-transponder satellites such as FO-29, rather than the FM satellites. He said he may one day get into HF more seriously, but, for now, he finds VHF/UHF/SHF "more fascinating."

He said the trip to Greenland, Iceland, and the Faroe Islands with his mother and his sister, was "fantastic," although, he noted, "they may have sometimes been annoyed by my getting up at 3 AM or several times "Sometimes it was a very nice sunny day, and sometimes it was rainy, windy, and cold," he recounted. "But, I was happy to operate in everything, and it paid off."

Zeifman, who said he enjoys visiting in "the north," has been to Northwest Territories twice in the past couple of years, and is hoping for an ATC assignment in Alaska. "But now that I'm a ham, I've really developed a passion for operating satellites while all over the world," he told ARRL. He said a goal still on the far horizon would be to complete a "reverse DXCC" on satellite – working the US on satellites from 100 DXCC entities. "I think it's definitely achievable someday," he added.

[ANS thanks ARRL for the above information]

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437 MHz Sprite Satellites Deployed

Scientific American magazine interviews radio amateur Zac Manchester KD2BHC in the article Breakthrough Sends Smallest-Ever Satellites into Orbit.

On June 23, 2017 six tiny satellites were sent into low-Earth orbit as secondary payloads on the Venta and Max Valier satellites that were launched on the Indian PSLV-C38 rocket. These six satellites are comparatively dainty, but punch far above their weight. Called "Sprites," each is a 4-gram flake of circuit-board just 3.5 centimeters on a side, packing solar panels, computers, sensors and communications equipment into an area equal to a U.S. postage stamp.

One Sprite apiece is attached to the outside of each mothership – the Latvian Venta satellite and the Italian Max Valier satellite, the latter of which also holds four additional Sprites awaiting deployment into space as wholly independent spacecraft. Radio telemetry from minuscule magnetometers and gyroscopes on the deployed Sprites would then be used to track the spacecraft as they shift, spin and tumble, to better understand their orbital dynamics.

Signals on 437.325 MHz from at least one of the exterior-mounted Sprites have been received in California and New York.

Read the Scientific American article at https://www.scientificamerican.com/article/reaching-for-the-stars-breakthrough-sends-smallest-ever-satellites-into-orbit/

Zac Manchester KD2BHC had 104 Sprite satellites launched into orbit on board KickSat-1 on April 18, 2014 but the Sprites failed to deploy https://amsat-uk.org/2014/04/18/successful-launch-of-kicksat-carrying-104-sprite-satellites/

[ANS thanks AMSAT-UK for the above information]

QIKCOM-1 Team Expect Eclipse Day ISS Deployment

The US Naval Academy team say their amateur radio QIKCOM-1 APRS Digipeater payload may be deployed from the International Space Station on August 21.

The QIKCOM-1 page says:
The Ham Radio QIKCOM-1 module attached to the NovaWurks NanoRacks SIMPL spacecraft is now finally scheduled for release from the ISS on 21 August 2017!

This is being released on the same day as the solar Eclipse when the ISS will also be passing over the USA during the eclipse 2 hour window around 1800z. We are not clear on any correlation with the Eclipse and our release, but there will be lots of hams in the field and it is a good day to tune in!

Read about QIKCOM-1 at http://aprs.org/qikcom-1.html

[ANS thanks AMSAT-UK ans the QIKCOM Team for the above information]

One Radio Amateur is Part of New Crew Increment Heading to ISS

European Space Agency (ESA) Astronaut Paolo Nespoli, IZ0JPA, NASA astronaut Randy Bresnik, and Russian cosmonaut Sergey Ryazanskiy will head to the International Space Station (ISS) on July 28. They will launch from Baikonur Cosmodrome in Kazakhstan. The Expedition 52/53 crew will spend more than 4 months together aboard the orbital complex before returning to Earth in December. After launching in their Soyuz MS-05 spacecraft, the trio will travel for 6 hours before docking. Once the hatches between the Soyuz and ISS open, Expedition 52 Commander Fyodor Yurchikhin, RN3FI, and Flight Engineers Peggy Whitson, ex-KC5ZTD, and Jack Fischer, K2FSH, will welcome the new crew members aboard. Their arrival will double the population of the ISS. Expedition 52 will continue work on hundreds of experiments in biology, biotechnology, physical science, and Earth science aboard the ISS, NASA said.

AMSAT-IT and the ARISS International community is anticipating a successful mission from ESA Astronaut Paolo Nespoli, IZ0JPA, with many direct ARISS contacts scheduled.

[ANS thanks ARRL and ARISS for the above information]

Fox-1 Operating Guide Updates for 2017

The Fox-1 Operating Guide has been updated for 2017. This can be used for personal reference and be made available for club meeting and hamfest handouts. Designed to be printed double sided the Operating Guide is available in two file sizes:

+ The lower resolution PDF file is designed to shrink file size for e-mail, web posting, or on-screen viewing. (~300K)

+ The high resolution PDF file is publication quality designed for hard-copy printing. (~2 MB)

The PDF files can be accessed on the AMSAT web:
https://www.amsat.org/station-and-operating-hints/

[www.amsat.org] --> [Satellite Info] --> [Station and Operating Hints]

Launch status and dates continue to be driven by the space industry and may change as the year progresses.

[ANS thanks the AMSAT Web Gurus for the above information]

AMSAT Presentation at the Austin Summerfest, August 5, 2017

The AMSAT Presentation at the Austin Summerfest, August 5, 2017 will be given by Ron Parsons, W5RKN.

The presentation will consist of two parts:

Introduction to AMSAT --and-- A Software Defined Radio Satellite Station: The Evolution of its Design

For more information, see
http://www.austinsummerfest.org/

Ron Parsons, W5RKN, has been a licensed amateur radio operator since 1954, a member of AMSAT and active in amateur radio satellite communications since 1993. He has participated in three ARISS (Amateur Radio on the International Space Station) school contacts: Fulmore Middle School (MIR - 1998) and Blackland Prairie Elementary (2008) and Liberal Arts and Science Academy with Richard Garirott (1998). He has a Ph.D. in Physics from Stanford and taught at The University of Texas at Austin.

[ANS thanks Ron, W5RKN for the above information]

ARISS News

Recent Contacts

A telebridge contact with students from the Tuskegee Airmen Youth in Aviation Program at The International Space Station (ISS) Research and Development (R&D) Conference, Washington, D.C., was successful Thu 2017-07-20 13:23:10 UTC 56 deg.

An International Space Station school contact was successful with participants at ISS R&D conference, Washington, D.C. on 20 July. The event began at approximately 13:23 UTC. The contact was a telebridge between NA1SS and W6SRJ.

See the video at:
https://www.facebook.com/SpaceStationExplorers/videos/334464240317857/

The contact was very successful with 24 questions answered. Five astronauts were present during the contact.

Frank Bauer KA3HDO, ARISS International Chairperson and AMSAT VP for Human Spaceflight, said of the event, "Great day [Thursday July 20] at the ISS R&D Conference. This was a very important contact with our sponsors---CASIS and NASA SCaN at the event and many of the CASIS senior leaders in attendance. It was great to see several members of the multi-generational astronaut team, that have supported ARISS for over 20 years now, on stage and giving their perspectives of their ARISS connections from space.

This ARISS contact was conducted with Youth in Aviation Program students from the East Coast Chapter, Tuskegee Airmen, Inc. (ECCTAI) attending the ISS Research and Development conference as part of the conference's STEM day. ECCTAI is one of the largest Tuskegee Airmen, Inc. chapters in United States and serves the Washington DC area. ECCTAI is dedicated to keeping alive the history, achievements, and importance of the original Tuskegee Airmen. The term, "Tuskegee Airmen," refers to the men and women, who were involved in the so-called "Tuskegee Experience", the World War II Army Air Corps program to train African Americans to fly and maintain combat aircraft. ECCTAI strives to increase understanding of the "Tuskegee Experience" by honoring the accomplishments and perpetuating the history of the men and women who participated in the "Tuskegee Experience" and to introduce young people to the world of aviation and space through its Youth in Aviation Program (YIAP). YIAP motivates and inspires America's youth to strive for similar excellence of these earlier pioneers, exposing them to aviation and space careers (Level I), attending FAA ground school (Level II) and receiving aircraft flight instruction or interning at an FAA certified A&P (Airframe and Powerplant) facility (Level III).

Upcoming Contacts:

VCP-Bundeszeltplatz, Großzerlang, Germany, direct via DP9S
The ISS callsign is presently scheduled to be OR4ISS
The scheduled astronaut is Paolo Nespoli IZØJPA

Contact is a go for: Tue 2017-08-01 18:20:35 UTC 46 deg

Frontiers of Flight Museum/ Moon Day, Dallas, TX, telebridge
via ON4ISS
The ISS callsign is presently scheduled to be TBD
The scheduled astronaut is Paolo Nespoli IZØJPA
Contact is a go: Sat 2017-08-05 18:02:31 UTC 87 deg

[ANS thanks ARISS and Charlie, AJ9N for the above information]

Satellite Shorts From All Over

Message from Space hails Big Lottery Fund Award for Norfolk UK Based Amateur Radio Group

Thanks to UK National Lottery players, the Bittern DXers, a North Norfolk UK based Amateur Radio club, are celebrating an award of just under £10,000 by the Big Lottery Fund to help them introduce people to the endless possibilities in technology that Amateur Radio offers to young and old alike.

News of the award was heralded around the world by a message transmitted by the FunCube 1 satellite congratulating the group on their award. FunCube 1 was built by members of the Amateur Radio community and launched into orbit on 21st November 2013. It was built with the goal of enthusing and educating young people about radio, space, physics and electronics, and is the first satellite with outreach as its primary mission and demonstrates the depth and breadth of the hobby of Amateur Radio.

The Bittern DXers' own Educational Outreach Project aims to take advantage of technology like FunCube to bring demonstrations of as many aspects as possible of their hobby to public events in Norfolk as well as reaching out to young people in schools, scouting and guiding etc.

With the money provided by National Lottery players, the group have purchased gazebos, radios and demonstration equipment allowing them to take a complete hi-tech station to public shows and events that enables conversations with other amateurs around the world, as well as pick up signals live from the International Space Station, weather satellites and the many other amateur satellites currently in space.

Chairman, Steve Cordner - callsign M0HET, said: “We are immensely grateful to the Big Lottery Fund and National Lottery players, for allowing us the opportunity to introduce amateur radio to people and show them what we do.

“We already know for example that when young people are shown images being received live from space, that their imagination is fired up and they want to find out more. For older people it can break down barriers of loneliness and disability and allow them to communicate with others across county, country and world.

“Becoming a Radio Amateur makes one more employable as well as leading to a lifetime of personal growth in the field of electronics and radio communication. Many people holding senior roles in high-tech industries today owe their careers to an early interest in amateur

radio. Our project aims to provide people of all ages that 'first contact' with Amateur Radio."

Club Secretary, Linda Leavold, who has been licensed for more than 30 years with her callsign G0AJJ, is proof that it is not just a male hobby! She remarked "Being a radio amateur gives one a great sense of personal achievement especially when you make that long distance contact with someone on another continent. And its something the whole family can get involved in."

Laughing she added "Even my husband Richard joined me on the air after a couple of years! He got fed up with burnt offerings for meals and decided to discover just what it was that was occupying my time.

"It doesn't matter where you come from, whether you have any disabilities or what age you are, Amateur Radio has something to offer everyone and we want to get out there and show people what they are missing."

Although they have a very busy calendar already this year, they welcome contact from any person or organisation who might be interested in seeing what they do. The contact details are available on
www.bittern-dxers.org.uk

[ANS thanks Julian, M0NUX for the above information]

NASA Ground Station for Voyager 2

YouTube tour of Deep Space Tracking Station in Austrailia.
https://www.youtube.com/watch?v=1rCrfQUcXDI

[ANS thanks Zach, N0ZGO for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Joe Spier, K6WAO
k6wao at amsat dot org